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Green appetite: Exploring consumer perceptions of sustainably produced oats in Western Odisha

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Abstract

The present study aims to analyse the attitude of consumers towards sustainable-produced oats in western Odisha. The study uses descriptive statistics and empirical statistics like logistic regression and ANOVA to make the analysis more robust. The study is based on primary data. We have collected 176 responses through a structured questionnaire in both online and offline modes. The study finds that factors like price, health benefits, and status symbols have an impact on the buying behaviour of consumers of sustainably produced oat products. The study also finds that the status symbol is a positive predictor, but price and health benefits are negative predictors of consumer behavior. So, it can be inferred that though people are aware of the health benefits of Oats products, such awareness is not converting to their buying behavior. Similarly, if the price is high, it will affect the buying of such products negatively. We also found that there is no such impact of income level and education level on buying behaviour, as we didn't observe any significant difference among such groups.

Keywords: Oats product, consumer behaviour, sustainability, consumer awareness

Introduction

The Oats whose botanical name is *Avena sativa*, is a species of cereal grain which is grown for its seeds and is suitable for human consumption as Oatmeal, oats are very nutrient-rich food that consumption can lower blood cholesterol. It is simply made by boiling oats in water or milk in a low flame for 3-5 minutes. It has become one of the favourite food for students and office-going people who have to leave early for school, college or the office. One of the biggest worldwide issues of our century and lifetime is the change of climate. Every civilization and every person is impacted. Every industry needs to take it seriously, and consumers are crucial allies in the fight against climate change.

Concerns about ethics and the environment, as well as health risks, have altered consumer behaviour and attitudes towards buying sustainable goods, the trend towards more sustainably produced goods has begun, but significant changes must be made in order to alter our consumption pattern. We must admit that the rise in food supply and human population does have a cost, typically one that is difficult to estimate (Baldwin, 2009) ^[13]. One of the key goals of our century has been achieving sustainability in the food system, and in recent years, people have been increasingly interested in purchasing sustainable food items. Consumer behaviour have shown that to be the case. Because customers' concerns about morality have grown due to environmental contamination, the market share of sustainable products is progressively rising (Seo *et al.*, 2016) ^[8]. There is little doubt that sustainability plays a significant role in how people consume and view food items. Every time a person chooses whether (Or not) to buy a good or service, that choice has the potential to contribute to a consumption pattern that is more or less sustainable (Young, 2008) ^[14]. Even if you are an individual, you can still affect change by making 'greener' choices when it comes to what you eat and how you shop. As advertisement characteristics greatly influence customer buying intention (Kewat *et al.*, 2023) ^[12], marketers should include sustainable features in advertising.

Considering all these points, the present study attempts to investigate the awareness level of consumers about Oats, to study the consumer attitude towards sustainably produced Oats, to analyze the factor influencing the purchase of sustainably produced Oats products, and to analyze the impact of income level and educational level of consumers on their buying behavior.

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Review of Literature

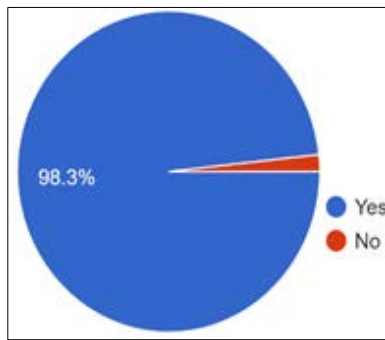
Sakki (2021) ^[7] in their research study conclude that health scares and different concerns relating to environmental and ethical reason have changed the consumer behaviour and their attitudes towards purchasing healthy products. The attitude of consumer and how they use food will greatly influence how the sector develops in the future. Sakki include the agricultural aspect and its significance to the research even though the interaction between the agricultural systems and the environment is complex. The main result of the research shows that the consumers had a positive attitude towards sustainably produced Oats and they already using I as their meal. Šimurina *et al.* (2018) ^[9] found that in the modern times, porridge made from Oats is enjoying a revival as a healthy breakfast food. In comparison to Oat porridge, the spelt extrudate and quick porridge had more total and insoluble fibers, proteins, and minerals as well as fewer accessible carbohydrates porridge and Oat extrudate had higher levels of soluble fat and fiber. In comparison to Oats, spelt extrudate and porridge had better hydration qualities. Behall & Hallfrisch (2014) ^[2] found that there has been an increase in interest in the ability of certain foods or physiologically active dietary ingredients, or so-called functional foods, to improve health. As a functional food, oats have physiological advantage like a hypoglycemic impact, a hypocholesterolemic effect, and a cancer and hypertension prevention effect. Oats are a good source of protein, fats, vitamins, antioxidants, phenolic compounds, minerals, and other nutrients. Varma *et al.* (2016) ^[11] discovered that due to their cool, damp climates, oats are primarily a crop grown in Europe and North America; the top oat-producing nations are Russia, Canada, the United States, Finland, and Poland. Since ancient times, oats have been consumed by humans and animals alike. Even relatively young people are acquiring joint problems and knee discomfort as a result of lifestyle disorders that are making it impossible for more and more people to control their excessive body weight. Numerous health issues, such as high blood pressure, diabetes, and cardiovascular diseases, are linked to being overweight. Annunziata & Scarpato (2014) ^[1] found that there are still a number of reasons that prevent customers from translating their good attitudes toward products with sustainability qualities into actual acts of purchase. According to our empirical findings, businesses and policymakers should engage consumers more actively, inform them about the availability of products, more effectively communicate the potential benefits of sustainable food products, and exert more social pressure to encourage more environmentally friendly lifestyles in order to encourage the adoption of sustainable food consumption models. Mehra & Ratna (2014) ^[6] in their study showed that consumers, particularly women and younger ones, had a positive attitude toward organic food and thought eating it was a healthier option. When choosing nutrient-dense foods, they were eager to compare labels and obtain product information. Women thought eating organic food was a healthier choice. Most respondents with less than a bachelor's degree thought that eating organic food was trendy. As opposed to this, graduates and postgraduates demonstrated a willingness to pay a higher price premium for organic food and did not view it as a trending item. Consumer attitudes toward organic food were considerably influenced by employment. Students and independent

workers exhibited a largely favourable opinion toward organic food. The quality of organic food was seen favourably by students, who also chose reasonably priced foods. Thus, respondents in the younger age group were interested in consuming food that was both healthy and affordable. Clemens & Van Klinken (2014) ^[6] hoped that highlighting the distinctive qualities of oats in this study will increase awareness among researchers, health professionals, consumers, and legislators. Oats are under increasing pressure from other crops like soy and maize that provide farmers with a higher financial return due to a lack of subsidies and more alluring contract offers for those other grains. Additionally, there is a chance for oats to benefit a wider range of consumers worldwide by providing wholesome foods in appealing forms. Partnerships between the public and private sectors may aid in increasing consumer and healthcare professional awareness. Oats are more than just a whole grain, as the research unequivocally reveals. Ljubičić *et al.* (2017) ^[5] in their study stated that there is a necessity of campaigns and other interventions to promote the consumption of whole grains as opposed to refined grains, which are significantly less nutritious. Our study included a wide cross-section of the Croatian population, giving a reasonable look into the present trends in the consumption of vegetables, fruit, and whole grains, even if it did not rely on food diaries or 24-hour dietary recall surveys. These results can direct the creation of public health initiatives and campaigns to encourage healthy eating. Seo *et al.* (2016) ^[8] in their study says that because of environmental preservation and business maximisation, manufacturers consider the eco-friendliness of their products when developing and updating them. There are many different eco-friendly ingredient goods on the market, and many of them were created without taking into account the characteristics of the product itself. The findings of this study suggested that instead of developing utility- and gentleness-related items as eco-friendly packaged goods, these should There have been many studies in the past regarding consumer behaviour and perception towards sustainably produced Oats products. But very few of them have figured out the perception and buying behaviour of the consumers towards sustainably produced Oats products. The consumer attitude towards sustainably produced oats products and its impact on consumer buying behaviour have also been discovered by a few studies and none of them is in the Western Odisha context. Moreover, many studies have been conducted with fewer sample sizes which do not represent the real scenario. This study will attempt to fill all these gaps.

Methodology

The purpose of this study is to ascertain consumer perceptions of oat products made sustainably. The study is mainly descriptive and empirical in nature. As a research tool, the online questionnaire was chosen. The purpose of the survey was to gather information on customer perceptions. The survey was created online utilising the Google Forms platform because of its usability and useful features. The data collection was conducted and collected through different platforms in social media. With using different platforms, we wanted to make sure that wide range of respondents and different demographics and all their viewpoints were collected. We have used ANOVA and Regression for the analysis with help of SPSS software.

Results and Discussions



Source: Compiled by the author

Fig 1: Respondents awareness about oats products

In our survey we found that almost whole of the population know about oats (98.3%) and a significant population is also there who don't know about oats or oats products.

Result of binary logistic Regression

Table 1: Dependent Variable Encoding

Original Value	Internal Value
No	0
yes	1

Source: Compiled by the author from SPSS

Dependent variable: buying behavior

In this model we have considered buying behavior as the dependent variable. The response for this variable are collected in a dichotomous manner as yes or No. for the analysis purpose we have coded 'No' as '0' and 'yes' as '1'

Table 2: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	8.558	3	.036
	Block	8.558	3	.036
	Model	8.558	3	.036

Source: Compiled by the author from SPSS

Table 5: Variables in equation

		B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	Status symbol	.409	.162	6.376	1	.012	1.505	1.096	2.066
	Price	-.301	.204	2.181	1	.140	.740	.496	1.103
	Health benefit	-.097	.149	.421	1	.517	.908	.678	1.216
	Constant	.729	.938	.604	1	.437	2.074		

Source: Compiled by the author from SPSS, a. Variable(s) entered on step 1: status symbol, price and health benefit

Here status symbol is a positive and significant predictor of oat consumption ($b=0.409$, $Wald \chi^2=6.376$, $p=0.012$). Here the odds ratio or $Exp(B)$ is 1.505 which indicates that for every unit increase in consumers attitude for oats as a status symbol, consumption of oat products increases by 50.5%. Here price is a negative and insignificant predictor of consumer buying behavior for oats product ($b=-.301$, $s.e.=.204$, $wald \chi^2(1)=2.181$, $p=.140$). The $Exp(B)$ is .740 which indicates that for every unit increase in price the consumption is decreases by 26% ($1-0.740*100$). Similarly, health is also a negative and insignificant predictor of consumer buying behavior for oats product ($b=-.097$, $s.e.=.149$, $wald \chi^2(1)=.421$, $p=.517$).

This omnibus test helps in accessing whether the independent variables have some impact on the dependent variable. It represents the incremental fit.

HO: There is no incremental fit in the model.

Here, the null hypothesis has been rejected because the chi-square value is 8.558 and the "P" value is less than 0.05, which indicates that the model's fit is significantly better than the null model.

Table 3: Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	204.688 ^a	.049	.069

Source: Compiled by the author from SPSS

a. Estimation terminated at iteration number 4 because aparameter estimates changed by less than.001.

Both Cox & Snell R-square and Nagelkerke R-square are pseudo-R-square values. The Nagelkerke pseudo-R-square ranges from 0-1 and is an adjusted version of the Cox and Snell.

According to the Nagelkerke pseudo-R-square here, a 6.9% change in the dependent variable can be accounted for the independent variables.

Table 4: Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	5.041	8	.753

Source: Compiled by the author from SPSS

The Hosmer & Lemeshow test is a goodness of fit test, testing the 'estimated model to one that has perfect fit' (Pituch & Stevens, 2016) [15].

HO: the model is a perfect fit.

Here, the null hypothesis is not rejected as the Hosmer and lemeshow test is not statistically significant [$\chi^2(8) = 5.041$, $p=.753$] which indicates a perfect fit of the model.

The $Exp(B)$ is .908 which indicates that for every unit increase in health benefit the consumption of oats decreases by 9.2% ($1-90.8*100$).

Though impact of price and health benefit is not significant, the result gives direction regarding consumer behavior of Oats product as discussed above.

Test of ANOVA

Table 6: Anova test of age group for consumption behaviour.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.607	4	1.402	1.470	.214
Within Groups	156.393	164	.954		
Total	162.000	168			

Source: Compiled by the author from SPSS

As the 'p' value here is .214 which is more than 0.05, we do not reject the null hypothesis. It indicates that there is no significance difference among different education level regarding attitude for buying oats products.

Table 7: Anova test of Income level for consumption behavior.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.863	4	2.216	2.373	.054
Within Groups	153.137	164	.934		
Total	162.000	168			

Source: Compiled by the author from SPSS

As the 'p' value here is .054 which is more than 0.05, we do not reject the null hypothesis. It indicates that there is no significance difference among the consumers of different income level regarding attitude for buying oats products.

Conclusion and Policy Implications

The purpose of this study was to ascertain customer perceptions of sustainably produced oat products in western Odisha. One of the major global priorities of our century is sustainability in the food business. Concerns about one's health as well as many ethical and environmental issues have altered customer behaviour and attitudes toward buying sustainable goods. From the study, it has been found that 98.3% of our respondents are aware about Oats product. By applying binary logistic regression, we found that factors like price, health benefit and status symbol have impact on the buying behavior of consumers on sustainably produced oats product. We found that status symbol is the positive predictors but price and health benefit are negative predictors of consumer behavior. So, it can be inferred that though people are aware about health benefits of Oats products, such awareness is not converting to their buying behavior. Similarly, if the price will be high, it will affect the buying of such product negatively. We also found that there is no such impact of income level and education level on buying behavior as we didn't observe any significant difference among such groups.

Though there are high awareness about the Oats product among the consumers, their consumption behaviour does not match the awareness level. So, the companies should focus on strategies that will ensure conversion of awareness to consumption. As the study finds Status symbol as a positive and significant predictor of consumption behaviour of consumers of Oats product, the oats sellers should emphasize more on this factor while framing policies. The consumption behaviour of the customers is not significantly different across the age groups and the income level. Hence, these factors may be ignored while framing policies.

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